CLAIMS

What is claimed is:

1.   A health assessor for assessing health of a target element within a multi-element system, comprising

a plurality of sensors, each being operatively coupled to the target element to produce a measure of the target element;

a plurality of measure collectors, each collecting a measure from one of the sensors, wherein each of the collectors also stores the measure as historical measure;

a plurality of evaluators, each evaluating at least a subset of all the measures collected by the measure collectors in accordance with a pre-configured evaluation definition for the respective evaluator to provide an assessment;

a probabilistic reasoning network coupled to the evaluators to receive the assessment from each of the evaluators and to analyze all the assessments in accordance with a pre-configured reasoning definition so as to provide an overall probabilistic health assessment of the target element.

2.   The health assessor of claim 1, wherein the evaluation definition of an evaluator determines which of the measures collected by all of the measure collectors are to be received by the respective evaluator.

3.   The health assessor of claim 1, wherein each of the evaluators further comprises

an evaluation definition store that stores the pre-configured evaluation definition of the evaluator;

an evaluation module coupled to the evaluation definition store to provide the assessment by statistically comparing the subset of the measures and the historical measures based on the predefined evaluation definition.

4.   The health assessor of claim 3, wherein the operation of an evaluator can be changed by replacing the pre-configured evaluation definition for that evaluator with a new evaluation definition.

5.   The health assessor of claim 1, wherein the reasoning network is a Bayesian network probabilistic reasoning network.

6.   The health assessor of claim 1, wherein the overall health assessment of the target element is the probability indicating that the target element is healthy.

7.   The health assessor of claim 5, wherein the probabilistic reasoning network further comprises a reasoning definition store that stores the pre-configured reasoning definition, wherein the pre-configured reasoning definition defines how the probabilistic reasoning network should analyze all the assessments received from the evaluators to produce the overall health assessment of the target element.

8.   The health assessor of claim 7, wherein the operation of the probabilistic reasoning network can be changed by replacing the

pre-configured reasoning definition with a new reasoning definition.

9.   A health assessment system for assessing health of an element within a multi-element system, comprising

a health assessment engine that receives measures of the target element and provides health assessment of the target element based on the measures and historical measures of the target element, wherein the historical measures have already been stored in the health assessment engine;

a result formatting module that formats the health assessment into a report;

a web interface that transmits the formatted report to a remote access system via the Internet.

10.   The health assessment system of claim 9, wherein the health assessment engine further comprises

a plurality of sensors, each being operatively coupled to the target element to produce a measure of the target element;

a plurality of measure collectors, each collecting a measure from one of the sensors, wherein each of the collectors also stores the measure as historical measure;

a plurality of evaluators, each evaluating at least a subset of all the measures collected by the measure collectors in accordance with a (1) pre-configured evaluation definition for the respective evaluator and (2) at least a subset of all historical measures of the target element that have already been stored in the collector to provide an assessment;

a probabilistic reasoning network coupled to the evaluators to receive the assessment from each of the evaluators and to analyze all the assessments in accordance with a pre-configured reasoning definition so as to provide an overall health assessment of the target element.

11.   The health assessment system of claim 10, wherein each of the evaluators further comprises

an evaluation definition store that stores the pre-configured evaluation definition of the evaluator;

an evaluation module coupled to the evaluation definition store to provide the assessment by statistically comparing the subset of the measures and the historical measures based on the predefined evaluation definition.

12.   The health assessment system of claim 11, wherein the operation of an evaluator can be changed by replacing the pre-configured evaluation definition for that evaluator with a new evaluation definition.

13.   The health assessment system of claim 10, wherein the reasoning network is a Bayesian network probabilistic reasoning network.

14.   The health assessment system of claim 13, wherein the probabilistic reasoning network further comprises a reasoning definition store that stores the pre-configured reasoning definition, wherein the pre-configured reasoning definition defines how the probabilistic reasoning network should analyze all the assessments received from the evaluators to produce the overall

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health assessment of the target element.

15. The health assessment system of claim 14, wherein the operation of the probabilistic reasoning network can be changed by replacing the pre-configured reasoning definition with a new reasoning definition.

16. The health assessment system of claim 10, wherein the remote access system is the target element.

17. The health assessment system of claim 10, wherein the remote access system is a remote access terminal or an application.

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